

What is claimed is:

1. An image-forming device comprising:

an image forming portion forming images on an image recording medium;

5       a signal-generating portion generating a status-indicating signal indicative of a status of the image forming portion;

      a storage portion storing data of the status-indicating signal; and

10       a storage control portion storing, in the storage portion, data of the status-indicating signal in association with time series data indicative of a series of time.

      2. An image-forming device according to Claim 1, wherein the storage control portion stores, in the storage  
15       portion, data of the status-indicating signal when the status-indicating signal changes.

      3. An image-forming device according to Claim 2, wherein the time series data indicates time intervals between successive timings when the status-indicating signal  
20       changes in succession.

      4. An image-forming device according to Claim 3, wherein when the status-indicating signal changes, the storage control portion stores the status-indicating signal data and timing data as the time series data, the timing  
25       data indicating a length of time that has been elapsed from

when the status-indicating signal has changed latest until the time when the status-indicating signal presently changes.

5. An image-forming device according to Claim 4, wherein the storage control portion includes a timing portion that measures time which has been elapsed from when the status-indicating signal has changed latest until when the status-indicating signal presently changes, the timing portion stopping measuring the elapsed time when a length of the elapsed time reaches a predetermined time, thereby allowing the time series data to have either one of a value smaller than or equal to the predetermined time and an overflow value indicative of a value greater than the predetermined time.

6. An image-forming device according to Claim 1, wherein the image forming portion includes at least one operating member that operates to form images on the image recording medium,

wherein the signal-generating portion includes:  
an operation signal supplying portion supplying at least one electric operation signal to the at least one operating member, each operating member operating in accordance with the received operation signal,

at least one sensor detecting at least one portion in the image forming portion and generating at least one detection signal;

an error detection portion determining that an error has occurred and cleared based on the at least one detection signal generated from the at least one sensor and generating an error signal indicative of an error, and

5        wherein the status-indicating signal includes at least one of the at least one electric operation signal, the at least one detection signal, and the error signal.

7. An image-forming device according to Claim 1, further comprising an output portion outputting the status-  
10        indicating signal data, which is stored in association with the time series data in the storage portion.

8. An image-forming device according to Claim 7, further comprising:

15        a connection portion connected to an external device;  
      a power source; and  
      a nonvolatile memory,

      wherein the output portion outputs the data of the status-indicating signal to either one of the external device, the nonvolatile memory, and the image forming  
20        portion,

      the nonvolatile memory maintaining the data of the status-indicating signal after the power source is turned off when the nonvolatile memory receives the data of the status-indicating signal,

25        the image forming portion forming an image of the data

of the status-indicating signal onto the image recording medium when the image forming portion receives the data of the status-indicating signal.

9. An image-forming device according to Claim 8,  
5 further comprising an output selection portion enabling an operator to select one of the external device, the nonvolatile memory, and the image forming portion, to which the operator desires to output the data of the status-indicating signal.

10 10. An image-forming device according to Claim 7, further comprising:

a mode selection portion enabling an operator to select one of an output enable mode and an output disable mode; and

15 a mode setting portion setting the output portion into the operator's selected mode, the output portion in the output enable mode executing its output operation, the output portion in the output disable mode failing to execute its output operation.

20 11. An image-forming device according to Claim 7, wherein the output portion automatically outputs the data of ~~the status-indicating signal~~ when the status-indicating signal indicates occurrence of error.

25 12. An image-forming device according to Claim 11, wherein the output portion outputs the data of the status-

indicating signal that has changed within a predetermined period of time before the occurrence of error.

13. An image-forming device according to Claim 7, wherein the output portion automatically outputs the data of the status-indicating signal when the status-indicating signal indicates clearance of error.

14. An image-forming device comprising:

an image forming portion forming images on an image recording medium;

10 a signal-generating portion generating a status-indicating signal indicative of a status of the image forming portion;

a storage portion storing data of the status-indicating signal; and

15 a storage control portion that stores, in the storage portion, data of the status-indicating signal in the form of a series of data in association with a series of time.

15. An image-forming device according to claim 34, wherein the storage control portion stores the status-indicating signal data in a series of time every time when the status-indicating signal changes.

----- 16. An image-forming device comprising:

a housing;

an image forming portion mounted in the housing and forming images on an image recording medium;

a sensor disposed in the housing and detecting a status of the image forming portion and generating a detection signal;

a storage portion storing data of the detection  
5 signal; and

a storage control portion storing, in the storage portion, data of the detection signal in association with time data indicative of a series of time.

17. An image-forming device according to Claim 16,  
10 wherein when the detection signal changes, the storage control portion stores the detection signal data and time data indicative of when the detection signal changes.

18. An image-forming device according to Claim 16,  
15 wherein the image forming portion includes a conveying portion conveying the image recording medium, and

wherein the sensor include a recording medium conveying state detection sensor detecting a conveying state of the image recording medium.

19. An image-forming device according to Claim 16,  
20 wherein the sensor includes a plurality of sensors, each detecting a corresponding status of the image forming portion and generating a detection signal, and

wherein the storage control portion stores, in the storage portion, data of the detection signal generated from  
25 each sensor in association with the time data.

20. An image-forming device according to Claim 17, further comprising an error detection portion determining that an error has occurred based on the detection signal generated from the sensor;

5        wherein the storage control portion further stores, in the storage portion, data indicative of the occurrence of error determined by the error detection portion in association with time data indicative of when the error has occurred.

10        21. An image-forming device according to Claim 20, wherein when the error detection portion determines that an error has occurred, the storage control portion stores the error data and time data indicative of when the error has occurred.

15        22. An image-forming device according to Claim 21, wherein the error detection portion determines that the error has been cleared based on the detection signal generated from the sensor;

20        wherein the storage control portion further stores, in the storage portion, data indicative of the clearance of error determined by the error detection portion in association with ~~time data~~ indicative of when the error has been cleared.

25        23. An image-forming device according to Claim 22, wherein when the error detection portion determines that an

error has been cleared, the storage control portion stores the error data and time data indicative of when the error has been cleared.

24. An image-forming device according to Claim 23,  
5 wherein the image forming portion includes an operating member that operates to form images on the image recording medium,

further comprising:

10 an operation signal supplying portion supplying an operation signal to the operating member, the operating member operating in accordance with the operation signal,

wherein the storage control portion stores, in the storage portion, data of the operation signal that the operation signal supplying portion has supplied to the  
15 operating member in association with the time data.

25. An image-forming device according to Claim 24, wherein when the operation signal changes, the storage control portion stores the operation signal data and time data indicative of when the operation signal changes.

20 26. An image-forming device according to Claim 25, further comprising an output portion outputting the ~~detection-signal data and its associated time data~~, the error occurrence data and its associated time data, the error clearance data and its associated time data, and the  
25 operation signal data and its associated time data.



27. An image-forming device according to Claim 26,  
wherein the output portion outputs the data of the error  
occurrence, the data of the error clearance, and the data of  
the detection signal and the operation signal that have  
5 changed during a prescribed time period up until the error  
has occurred.

28. An image-forming device according to Claim 27,  
further comprising a connection portion connected to an  
external device, and  
10 wherein the output portion includes an external device  
output portion outputting the detection signal data and its  
associated time data, the error occurrence data and its  
associated time data, the error clearance data and its  
associated time data, and the operation signal data and its  
15 associated time data to the external device.

29. An image-forming device according to Claim 27,  
further comprising a nonvolatile memory, and

wherein the output portion includes a memory output  
portion outputting the detection signal data and its  
20 associated time data, the error occurrence data and its  
associated time data, the error clearance data and its  
associated time data, and the operation signal data and its  
associated time data to the nonvolatile memory.

30. An image-forming device according to Claim 27,  
25 wherein the output portion includes a print output portion

controlling the image forming portion to print the detection  
signal data and its associated time data, the error  
occurrence data and its associated time data, the error  
clearance data and its associated time data, and the  
5 operation signal data and its associated time data on the  
image recording medium.

31. An image-forming device according to Claim 27,  
further comprising:

10 a mode selection portion enabling an operator to  
select one of an output enable mode and an output disable  
mode; and

a mode setting portion setting the output portion into  
the operator's selected mode, the output portion in the  
output enable mode executing its output operation, the  
15 output portion in the output disable mode failing to execute  
its output operation.

32. An image-forming device according to Claim 27,  
wherein the output portion executes its output operation  
when the error detection portion determines that an error  
20 has occurred.

33. An image-forming device according to Claim 27,  
~~wherein the output portion executes its output operation~~  
when the error has been cleared.

34. An image-forming device according to Claim 25,  
25 wherein the storage control portion includes a timing

portion measuring time which has been elapsed from a first time when the storage control portion has written data of either one of the detection signal data, the operation signal data, the error occurrence data, and the error clearance data latest until when the storage control portion presently writes data of either one of the detection signal data, the operation signal data, the error occurrence data, and the error clearance data, the storage control portion presently storing the time data that is indicative of a length of the measured time.

35. An image-forming device according to Claim 34, wherein the timing portion stops measuring the elapsed time when the length of the elapsed time reaches a predetermined value.